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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,348	03/21/2001	Yoshihito Asao	Q63175	3466

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SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, DC 20037-3213

EXAMINER

GONZALEZ, JULIO C

ART UNIT PAPER NUMBER

2834

DATE MAILED: 12/03/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/813,348

Applicant(s)

ASAO ET AL.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Electrical power supply system for a vehicle having a step-up and step-down DC/DC converter.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the speed detector disclosed in claim 4 and the temperature sensing device disclosed in claim 5 and the current detecting device disclosed in claim 6 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

3. The drawings are objected to under 37 CFR 1.83(b) because they are incomplete. 37 CFR 1.83(b) reads as follows:

When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

Correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 3 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

✓ In claim 3, the statement, "output voltage of said alternator changing in response to said" needs more clarification. In what way is the alternator "changing"? Is the alternator physically "changing"?

✓ In claim 10, what is meant by the DC/DC converter having a negative gradient? Is the temperature of the converter dropping down?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneyuki in view of Suzuki et al.

Kaneyuki discloses a power supply system for a vehicle having an alternator 1 with armature winding 2, field coil 3, a load 11, a battery 10, a voltage control means 8 and a control means 20 and a DC/DC converter 14 (see figure 1).

However, Kaneyuki does not disclose the use of step-up DC/DC converter.

On the other hand, Suzuki et al discloses for the purpose of reducing energy losses of a vehicle and reducing the cost of maintenance of vehicles that a step-up DC/DC converter is used in conjunction with voltage control means and control means (see figure 3) and rotation sensor 6.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a power supply system as disclosed by Kaneyuki and to use a step-up converter for the purpose of reducing energy losses of a vehicle and reducing the cost of maintenance of vehicles as disclosed by Suzuki et al.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneyuki in view of Suzuki et al and Taniguchi et al.

Kaneyuki discloses a power supply system for a vehicle having an alternator 1 with armature winding 2, field coil 3, a load 11, a battery 10, a voltage control means 8 and a control means 20 and a DC/DC converter 14 (see figure 1).

However, Kaneyuki does not disclose the use of step-up DC/DC converter.

On the other hand, Suzuki et al discloses for the purpose of reducing energy losses of a vehicle and reducing the cost of maintenance of vehicles that a step-up DC/DC converter is used in conjunction with voltage control means and control means (see figure 3) and rotation sensor 6.

However, neither Kaneyuki nor Suzuki et al disclose the voltage factor used.

On the other hand, Taniguchi et al discloses for the purpose of creating sufficient power when the load increases and increase the magnetic flux in the armature winding that the voltage factor can be of 1.2 to 2.0 (see claim 4).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a power supply system as disclosed by Kaneyuki and to use a step-up converter for the purpose of reducing energy losses of a vehicle and reducing the cost of maintenance of vehicles as disclosed by Suzuki et al and to use a specific voltage factor for the purpose of creating sufficient power when the load increases and increase the magnetic flux in the armature winding as disclosed by Taniguchi.

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneyuki in view of Suzuki et al and Kato et al.

Kaneyuki discloses a power supply system for a vehicle having an alternator 1 with armature winding 2, field coil 3, a load 11, a battery 10, a voltage control means 8 and a control means 20 and a DC/DC converter 14 (see figure 1).

However, Kaneyuki does not disclose the use of step-up DC/DC converter.

On the other hand, Suzuki et al discloses for the purpose of reducing energy losses of a vehicle and reducing the cost of maintenance of vehicles that a step-up DC/DC converter is used in conjunction with voltage control means and control means (see figure 3) and rotation sensor 6.

However, neither Kaneyuki nor Suzuki et al disclose the use of temperature and current detectors.

On the other hand, Kato et al discloses for the purpose of providing a charge control apparatus for an automobile capable of charging the battery while suppressing an amount of gassing, a current detector 6, a temperature detector 7, control means 9.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a power supply system as disclosed by Kaneyuki and to use a step-up converter for the purpose of reducing energy losses of a vehicle and reducing the cost of maintenance of vehicles as disclosed by Suzuki et al and to use a current detector for the purpose of providing a charge control apparatus for an automobile capable of charging the battery while suppressing an amount of gassing as disclosed by Kato et al.

10. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneyuki in view of Inaniwa et al.

Kaneyuki discloses a power supply system for a vehicle having an alternator 1 with armature winding 2, field coil 3, a load 11, a battery 10, a voltage control means 8 and a control means 20 and a DC/DC converter 14 (see figure 1).

However, Kaneyuki does not disclose the use of step-up and step-down DC/DC converter simultaneously.

On the other hand, Inaniwa et al discloses for the purpose of providing a highly efficient alternating current source and reducing harmonics, a step-down converter 196 and a step-up converter 197 (see figure 19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a power supply system as disclosed by Kaneyuki and to use a step-up and step-down converter simultaneously for the purpose of providing a highly efficient alternating current source and reducing harmonics as disclosed by Inaniwa et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jcg

November 13, 2001


NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800